REMARKS

Claims 2-8, 10-15, and 17-19 are pending in the application.

By the foregoing Amendment, claims 2, 3, 11, 13, and 19 are amended as discussed below in order to overcome the rejection under section 112, second paragraph. In addition, claim 19 is amended to address the Examiner's comments in paragraph 9 of the Office Action by specifying the direct connection between the two ends of the hollow connector section and mixing area and the chute section (thereby precluding a pump and/or secondary mixer between the mixing area and the chute section), and by specifying that continuous flow of the gypsum slurry from the mixing area into the chute section takes place by pressure of the mixer *only*; and to address the comment on page 6 of the Office Action that "[c]laim 19 reads on both of the claimed slurries being used for roll coat and thereby fails to require a core slurry, by specifying that the slurry discharge port feeds gypsum slurry for the gypsum core to a widthwise center part of a sheet of paper for gypsum board liner. Claim 19 is further amended to specify that the hollow connector section is constructed so as not to remove foam from the connector section. Support for the amendments to claim 19 is found in paragraphs 0019, 0066, 00071, and 0122 of the substitute specification.

These changes are believed not to introduce new matter, and entry of the Amendment is respectfully requested.

Based on the above Amendment and the following Remarks, Applicant respectfully requests that the Examiner reconsider all outstanding rejections, and withdraw them.

Rejection under 35 U.S.C. § 112, ¶ 2

In paragraph 3 of the Office Action, claims 2-8, 10-15, 18, and 19 were rejected under section 112, second paragraph, as being indefinite for lack of antecedent basis. This rejection is believed to be overcome by the foregoing amendments to claims 2, 3, 11, 13, and 19.

Rejections under 35 U.S.C. § 102

In paragraph 6 of the Office Action, claims 10, 13, and 19 were rejected under section 102(b) as being anticipated by Phillips *et al* (US 5,879,486). This rejection is believed to be overcome by the foregoing amendments to claim 19 and conforming amendments to claim 13.

The Office Action characterizes Phillips *et al* as teaching a single mixer (Phillips *et al*'s main mixer 36), a chute section (Phillips *et al*'s duct 57), a slurry delivery conduit (Phillips *et al*'s duct 44), a hollow connector section (the combination of Phillips *et al*'s conduit 37 and housing 41), and a slurry fractionation port (the opening in Phillips *et al*'s housing 41 leading to duct 44). It is respectfully submitted that this characterization of Phillips *et al* is incorrect.

In Phillips *et al*., the conduit 37 leads from the main mixer 36 to a high-speed beater 38, which includes a vaned member 39 (denoted by dotted lines in Figure 1) rotatably mounted in a housing 41. The beater 38 is a slurry agitator that carries out the agitating step of agitating the fractionated slurry. Foamed slurry from the main mixer 36 flows through the conduit 37 to the high speed beater 38, and the rapidly turning vanes 39 remove most of the air bubbles from the slurry by beating the slurry. As a result, the slurry flowing through the duct 44 to the coating apparatus is substantially defoamed. Column 3, lines 41-52. Therefore, Phillips *et al*'s conduit 37 and housing 41 are not constructed for providing said continuous flow without removing

foam from the gypsum slurry, as required by claim 19, and cannot correspond to the hollow connector section of the invention.

Further, the duct 58 in Figure 1 of Phillips *et al*, which is also shown as duct 59 in Figure 2 of Phillips *et al*, is a chute for feeding the slurry for the gypsum core to a widthwise center part of the sheet 14. Neither the duct 58 (Figure 1) nor the duct 59 (Figure 2) is provided with a fractionation port; and the duct 44 cannot receive the slurry from the mixer through either the duct 58 or the duct 59.

In view of the foregoing, it is respectfully submitted that Phillips *et al* does not anticipate the invention as recited in claim 19 and the claims depending therefrom; and that the rejection should be withdrawn.

Rejections under 35 U.S.C. § 103

In paragraph 7 of the Office Action, claims 2-8, 10-14, and 19 were rejected under section 103(a) as being unpatentable over Hauber *et al* (US 6,878,321) in view of Miura *et al* (US 6,193,408) and Sucech *et al* (US 5,683,635); in paragraph 8, claims 15 and 18 were rejected under 3section 103(a) as being unpatentable over Hauber *et al* in view of Miura *et al* and Sucech *et al*, and further in view of Seecharan *et al* (US 6,190,476). These rejections are believed to be overcome by the foregoing amendments to claim 19.

Applicant agrees with most of the characterizations in the Office Action of the teachings of Hauber *et al* and Miura *et al*, except as follows:

(1) Prevention of solid mass production in Miura *et al*. is an effect or advantage obtained from the provision of the bulged portions 72, 73, 72', 73' of the lower and upper pins 50, 60; and does not result from provision of the chute and hollow connector section.

(2) The mixer disclosed in Miura *et al* is based on the prior art pin-type mixer of JP8-25342 (which has already been made of record and accordingly is *not* submitted herewith), which is provided with the fractionation ports on the housing of the mixer for fractionating the slurry directly from the mixing area in the mixer.

(3) In the drawings of Miura *et al*, the depiction of the fractionation ports on the housing of the mixer -- as in the pin-type mixer of JP8-25342 -- is omitted merely for simplification of the drawings and the descriptions, because the gist of Miura *et al*'s invention relates to improvement of the pin configuration. This interpretation of Miura *et al*. is supported by the accompanying declaration of Yoshihiko Shimazoe, who actually wrote the specification and prepared the drawings of Miura *et al*.

(4) The Office Action assumes that the fractionation port of the slurry could have been located on the chute or the hollow connector section, but this assumption is incorrect, as demonstrated by the accompanying declaration of Mr. Shimazoe.

With respect to Sucech *et al*, the Office Action states at page 6:

> Sucech *et al* is additional evidence of the known practice in the gypsum board art to fractionate the slurry from "one slurry discharge". In particular, Sucech *et al* shows fractionating the slurry in one outlet 44 into two slurries - one flowing through conduit 46 and the other slurry flowing through conduit 48. The branch between outlet 44 and conduits 46, 48 defines a "slurry fractionation port". Only the expected and predicted results of the formation of two slurries having the same composition (one for the bottom sheet and the other for the top sheet) being obtained.

Claim 19 is amended to clarify that the fractionated slurry for roll coating or forming of the side edge of the board is the slurry separated in the chute or the hollow connector section from the core slurry (slurry for the gypsum core to be fed to the center part of the paper), and thus now clearly distinguishes the present invention from the cited teachings of Sucech *et al*.

In view of the foregoing, it is respectfully submitted that the invention as recited in claim 19, and the claims depending therefrom, is patentable over the cited prior art; and that the rejection should be withdrawn.

Conclusion

All rejections have been complied with, properly traversed, or rendered moot. Thus, it now appears that the application is in condition for allowance. Should any questions arise, the Examiner is invited to call the undersigned representative so that this case may receive an early Notice of Allowance.

Favorable consideration and allowance are earnestly solicited.

Respectfully submitted,

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Enclosures: Petition for Extension of Time
Declaration Under 37 CFR § 1.132 of Yoshihiko Shimazoe